DOCUMENT RESUME

ED 402 331 TM 025 856

AUTHOR Bakken, Carol H.
TITLE Two Basic Skills Instruments as Predictors of Performance on the GED Test for Incarcerated Male Youth.
PUB DATE Apr 96
NOTE 26p.; Paper presented at the Annual Meeting of the American Educational Research Association (New York, NY, April 8-12, 1996).
PUB TYPE Reports - Research/Technical (143) -- Speeches/Conference Papers (150)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS Adaptive Testing; Computer Assisted Testing; Correlation; *Equivalency Tests; Ethnic Groups; High School Equivalency Programs; Late Adolescents; *Males; *Prediction; *Prisoners; *Readiness; Skills; *Test Results; Test Use
IDENTIFIERS Basic Skills Inventory; Comprehensive Adult Student Assessment System; *General Educational Development Tests

ABSTRACT

Thousands of older incarcerated youth (17-18 years old) pass through the juvenile justice system every year. Many are not viable candidates for traditional high school graduation because of limited earned credits and large gaps in education. The purpose of this study was to establish an effective and efficient means for determining students' readiness for passing the General Educational Development (GED) test as an alternative to a traditional high school diploma. A correlational study was conducted, and 212 male subjects who were incarcerated in juvenile halls or long-term detention facilities were administered three tests. The Basic Skills Inventory-Computer Adaptive Test and the Comprehensive Adult Student Assessment System Extended Employability System Form 130 were used to predict performance on the GED test. The first hypothesis, which predicted a significant correlation between the two basic skills predictor instruments, was supported. Correlation coefficients were statistically significant at the 0.001 level. The second set of hypotheses, which predicted that the two basic skills instruments, either singly or together, would be significant predictors of performance on the GED, was supported. All subtests of the predictor instruments were statistically significant at the 0.001 level. The final pair of hypotheses, which predicted that the results would not vary significantly across ethnic groups, was supported. (Contains 10 tables and 18 references.) (Author/SLD)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
☑ This document has been reproduced as received from the person or organization originating it.
☐ Minor changes have been made to improve reproduction quality.
• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

PERMISSION TO REPRODUCE AND DISSEMINATE THIS MATERIAL HAS BEEN GRANTED BY
CAROL H. BAKKEN
TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

ED 402 331

TWO BASIC SKILLS INSTRUMENTS AS PREDICTORS OF PERFORMANCE ON THE GED TEST FOR INCARCERATED MALE YOUTH

A

Paper

Presented at the

1996 AERA Meeting

Carol H. Bakken, Ed. D.

Los Angeles County Office of Education
United States International University

TM025856

BEST COPY AVAILABLE

Abstract

Thousands of older incarcerated youth (17-18 years old) pass through the juvenile justice system every year. Many are not viable candidates for traditional high school graduation due to limited earned credits and large gaps in education. The purpose of this study was to establish an effective and efficient means for determining students' readiness for passing the General Educational Development (GED) test as an alternative to a traditional high school diploma.

A correlational study was conducted, and 212 male subjects who were incarcerated in juvenile halls or long-term detention facilities, were administered three tests. The Basic Skills Inventory-Computer Adaptive Test (BSI-CAT) and the Comprehensive Adult Student Assessment System Extended Employability System Form 130 (CASAS Form 130) were used to predict performance on the General Educational Development (GED) Test.

The first hypothesis, which predicted a significant correlation between the two basic skills predictor instruments, was supported. Correlation coefficients were statistically significant at the .001 level. The second set of hypotheses, which predicted that the two basic skills instruments, either singly or together, would be significant predictors of performance on the GED, was supported. All subtests on the predictor instruments were statistically significant at the .001 level. The final pair of hypotheses, which predicted that the results would not vary significantly across ethnic groups, was supported.

The State of California and specifically Los Angeles County are experiencing a marked increase in the numbers of incarcerated youth. In 1992, there were approximately 247,000 juvenile arrests in the State of California. Of these, almost 16,000 were remanded to custody with 1,800 placed in juvenile halls, 11,300 placed in probation camps, and 2,700 sent to the California Youth Authority (Little Hoover Commission, 1994).

The California Youth Authority incarcerates almost 9,000 wards and anticipates a 4.6 percent growth in the number of serious juvenile offenders housed in its facilities throughout the state during the next five years (Legislative Analyst's Office, 1993). With these high and increasing numbers, the percentage of youth being arrested places more of a burden on the educational system in the detention facilities.

On an average day over 5,000 juveniles are in school in detention facilities in Los Angeles County alone. This, coupled with a high turnover rate, brings over 56,000 young people through the short- and long-term facilities in a year's time, and these numbers are increasing (Los Angeles County Office of Education, 1994). The number of juveniles referred to the Los Angeles County Probation Department increased from 36,256 in 1985 to 46,893 in 1989 to an anticipated 57,652 in 1992 (Baird & Steinhart, 1991).

School records are sent for when students have been adjudicated and assigned to probation camps for a relatively long period of time (3 to 18 months). The school records for these students tend to be incomplete, showing much mobility and truancy resulting in large gaps in attendance. It is not uncommon for a 17-year-old to have attended 8 to 10 different schools, and to have accumulated fewer than 100 credits toward the 220 required in California for graduation. For these students, completing a

traditional high school diploma is neither realistic nor practical. These students are more appropriate for a high school equivalency program that focuses on providing tutorial preparation for an equivalency exam, such as the General Educational Development (GED) test. But with sporadic attendance patterns in public schools and gaps in academics due to the sporadic attendance, students are at different levels of readiness to attempt the GED. How can the student's readiness to take the GED be quickly and effectively determined to maximize his potential for success?

Thousands of older incarcerated youth (17-18 years old) pass through the juvenile justice system in California every year. Many are not viable candidates for traditional high school graduation due to few earned credits and large gaps in education. During the limited time spent in the juvenile correctional detention facilities, an alternative graduation system can provide an opportunity for job placement and/or entrance into institutions of vocational preparation or higher education when the juvenile is released back into the community.

The most widely accepted alternative diploma system is the General Educational Development (GED) Tests and is the most appropriate educational program for many older incarcerated youth. But the problem is, how can a teacher who has no long-term history with a minor, and who frequently has no school records that document the student's ability level, quickly and effectively determine when a student is ready to take and pass the GED. The purpose of this study was to establish an effective and efficient means for determining students' readiness for passing the General Educational Development (GED) Test as an alternative to a traditional high school diploma.

Item Response Theory forms the theoretical framework for this study for three main reasons. First, this is a study about prediction and IRT provides the psychometric basis for making predictions. Second, both BSI-CAT and CASAS Form 130 are grounded in IRT. Both of their item banks were scaled based on the Rasch Model as was the adaptive programming that drives BSI-CAT. Third, because BSI-CAT is in adaptive format, no two tests will ever contain the exact same items. Through Item Response Theory, an item or a set of items from the scaled item bank can be used to predict performance on another item or another set of items. Since each subject has a different set of items every time BSI-CAT is administered, IRT is what allows the results to predict performance on a separate instrument.

Item Response Theory (IRT) is a framework whereby performance on a specific item, (or, an entire test), can be predicted based on a single trait possessed by the examinee. IRT specifically "postulates that (a) underlying examinee performance on a test is a single ability or trait, and (b) that the relationship between examinee performance on each item and the ability measured by the test, can be described by a monotonically increasing function. The function is called an item-characteristic function (or an item response function), and it provides the probabilities of examinees at various ability levels answering the item correctly" (Hambleton, 1993, p. 148).

An Item Response Model has four characteristics. First, examinee performance can be predicted by defining examinee characteristics in terms of traits. Second, it specifies that a relationship exists between the observable response and the underlying trait. Third, an estimation of scores is made based on these traits (ability scores). Finally, these scores are

used to predict either item or overall test performance (Hambleton & Swaminathan, 1984). For this study, the underlying trait is the ability to perform basic skills.

Item Response Theory postulates that individuals vary in the ability being addressed by the test, and that their abilities are distributed along a continuum from low to high. The probability of answering an item correctly is assumed to vary with ability, with the probability being low for low ability individuals and high for high ability (Green, Bock, Linn, Lord, & Reckase, 1985). This concept is visualized through an Item Characteristic Curve (ICC) that differs for each item, and for each test as a whole.

According to McBride (1977), Item Response Theory permits the evaluation of "something closely akin to the standard error of measurement as a function of underlying ability, if the test item parameters are known" (p. 2). This test information function is defined as the square of the ratio of the slope of the regression line to the standard error of measurement, and is inversely proportional to the standard error of estimating an examinee's location on the trait scale (Educational Testing Service, 1980). The information function varies with ability, and can be plotted as a curve. From this, future responses can be predicted.

Item response models, based on Item Response Theory, have multiple uses and can be utilized for test building, equating test forms, measuring achievement growth, and linking one instrument to other national, state, and district tests and test score norms (Hambleton, Murray, & Simon, 1982). With a large pool of test items referenced to a single ability scale, a set of norms can be prepared from the administration of a sample of the items in the bank (Lord, 1980). The norms table can then be

applied to any tests which are constructed by drawing items from the bank (Hambleton & Martois, 1982). Large-scale testing programs, such as the GED Testing Service and the Educational Testing Service's Scholastic Aptitude Tests, use IRT models to equate test forms. The Psychological Corporation, CTB/McGraw-Hill, and other major test publishers are also using IRT to develop tests and to equate test scores (Hambleton, 1986).

Research Hypotheses

There were three hypotheses which formed the core of this study. The first hypothesis was complete in itself, the second hypothesis had three parts, and the third hypothesis contained two parts. The research hypotheses follow.

H_1: Performance on the Basic Skills Inventory-Computer Adaptive Test (BSI-CAT) and performance on the Comprehensive Adult Student Assessment System Extended Employability Competency System Form 130 (CASAS Form 130) are significantly correlated for male incarcerated youth.

H_{2a}: The Basic Skills Inventory-Computer Adaptive Test (BSI-CAT) is a significant predictor of performance on the General Educational Development (GED) for male incarcerated youth.

H_{2b}: The Comprehensive Adult Student Assessment System Extended Employability Competency System Form 130 (CASAS Form 130) is a significant predictor of performance on the General Educational Development (GED) for male incarcerated youth.

H_{2c}: The Basic Skills Inventory-Computer Adaptive Test (BSI-CAT) and the Comprehensive Adult Student Assessment System Extended Employability Competency System Form 130 (CASAS Form 130)

together are a significant predictor of performance on the General Educational Development (GED) for male incarcerated youth.

H_{3a}: The predictive validity of the Basic Skills Inventory-Computer Adaptive Test (BSI-CAT) in relation to the General Educational Development (GED) does not vary within ethnic groups of male incarcerated youth.

H_{3b}: The predictive validity of the Comprehensive Adult Student Assessment System Extended Employability Competency System Form 130 (CASAS Form 130) in relation to the General Educational Development (GED) does not vary within ethnic groups of incarcerated youth.

Methods

A correlational study was conducted in February of 1995 in 16 juvenile halls and long-term detention camp facilities in Los Angeles County. The Basic Skills Inventory-Computer Adaptive Test (BSI-CAT), and the Comprehensive Adult Student Assessment System Extended Employability System Form 130 (CASAS Form 130) were used to predict performance on the General Educational Development (GED) Test. These instruments are utilized in these facilities on a regular basis.

BSI-CAT is a tool developed by the Los Angeles County Office of Education in computer adaptive format to assess a student's competencies in the Reading, Language Arts, and Mathematics. The 8,000 items utilized in the three subtests were developed and scaled from 1980 to 1983 during the development of BSI-CAT's predecessor, the paper-and-pencil Basic Skills Inventory. Item Response Theory links the reliability and validity properties established for the original Basic Skills Inventory Item Bank to BSI-CAT.

CASAS Form 130 is an assessment instrument developed by the Comprehensive Adult Student Assessment System as part of an integrated system that provides student-centered curriculum management, assessment and evaluation systems for education systems, and vocational preparation programs in both the public and private sectors. Prior versions of this series are used regularly for job training programs in the camps and halls.

The Tests of General Educational Development, or GED, consists of a series of content-area tests "developed by the American Council on Education to enable persons who have not graduated from high school to demonstrate the attainment of developed abilities normally acquired through completion of a high school program of study" (GED Testing Service, 1993, p. 2-1). One out of every 7 diplomas awarded in the United States every year is through the GED (Harvey, 1992). Allen and Jones (1992) cite GED as "North America's primary second chance education program" with over 800,000 adults taking the test annually (p. i).

The GED is currently an option in all 50 states, the District of Columbia, nine U. S. territories or possessions, and ten Canadian provinces or territories (Auchter, Sireci, & Skaggs, 1993). In addition, several foreign countries now utilize the GED as a basis for issuing a high school diploma. The GED Tests are available in English, Spanish, and French editions as well large-print, Braille, and audiocassette formats for English (GED Testing Service, 1993).

The Official GED Practice Test (Form FA) was developed by the GED Testing Service to help GED candidates determine their readiness to take the actual GED Tests (Stewart, 1992). Having been first developed in 1979, Form FA is a relatively recent addition to the GED collection of tests.

The study was voluntary with all subjects signing letters of informed consent. Subjects were assigned to the six possible orders of presentation by site. Assessment was completed under rigorously controlled conditions by school counselors assigned to the participating sites. An exit survey collected data from the participants regarding their impressions of the experience. Data was analyzed by two independent researchers. Analysis included Pearson product moment correlation coefficients and stepwise multiple regressions.

This study assessed 212 incarcerated males 17 to 19 years of age. Sixteen assessment sites within the Los Angeles County Office of Education's Juvenile Court and Community Schools were utilized. These sites were certified as GED assessment sites. Three of the sites were juvenile halls, or short-term detention facilities. The 13 remaining sites were senior probation camps for older youth who were therefore age-appropriate for the GED.

Participants for the study were male incarcerated youth in the facilities of the Los Angeles County Department of Probation. All subjects were a minimum of 17 on the first day of testing to meet the California requirement for administration of the GED to incarcerated populations. Of the 350 subjects selected for the study, 212 completed all ten subtests of the three instruments and were included in the analysis of data. The ethnic breakout was 43 White, 62 African-American, and 107 Hispanic youth.

The sample was drawn from incarcerated 17+-year-old males from the various short-term and long-term juvenile detention facilities operated by the Los Angeles County Department of Probation and enrolled in the Los Angeles County Office of Education's Juvenile Court and

Community Schools (JCCS) located on the institutions' grounds. The sample included 17+ year old males entering these institutions who, for stability and detoxification purposes, were incarcerated a minimum of 10 days.

The sample excluded subjects with an anticipated release date of less than two weeks, or those who had successfully completed the GED less than 30 days prior to the initiation of the study. It also excluded subjects who were not fluent in English. The sample also excluded any subject who for health, safety, or security reasons, could not be mixed with the general population. Sites were randomly selected to the six possible order-of-presentation testing sequences and subjects were randomly selected from lists of study volunteers.

Results

The first hypothesis, which predicted a significant correlation between the two basic skills predictor instruments, was supported. Correlation coefficients were statistically significant at the .001 level. (See Table 1).

Table 1

H_1 Correlations

BSI-CAT as a Predictor of CASAS Form 130

BSI-CAT Subtest	CASAS Form 130 Reading		CASAS Form 130 Mathematics	
	r	r^2	r	r^2
Reading	.5044*	.2544	.3703*	.1371
Language Arts	.4688*	.2198	.3973*	.1578
Mathematics	.5472*	.2994	.5421*	.2939

N = 212 * 1-tailed Significance: .001

The second set of hypotheses, which predicted that the two basic skills instruments, either singly or together, would be significant predictors of performance on the GED, was supported. All subtests on the predictor instruments were statistically significant at the .001 level. (See Tables 2 and 3). Table 4 compares the results of the stepwise multiple regressions and the greatest simple correlation.

Table 2

H2a Correlations

BSI-CAT as a Predictor of GED

	BSI-CAT Reading		BSI-CAT Language Arts		BSI-CAT Mathematics	
GED Subtest	r	r^2	r	r^2	r	r^2
Writing Total	.6625*	.4389	.5544*	.3074	.7131*	.5085
Social Studies	.5960*	.3552	.5502*	.3027	.6292*	.3959
Science	.6411*	.4110	.5312*	.2822	.6792*	.4613
Literature & Arts	.6006*	.3607	.5069*	.2569	.5606*	.3143
Mathematics	.5380*	.2894	.4573*	.2091	.7216*	.5207
Average	.6922*	.4791	.5915*	.3499	.7510*	.5640

N = 212 * 1-tailed Significance: .001

Table 3

H2b Correlations

CASAS Form 130 as a Predictor of GED

GED Subtest	CASAS Form 130 Reading		CASAS Form 130 Mathematics	
	r	r^2	r	r^2
Writing Total	.5421*	.2939	.4550*	.2070
Social Studies	.5574*	.3107	.4389*	.1926
Science	.5551*	.3081	.4843*	.2345
Literature & Arts	.5041*	.2541	.4299*	.1848
Mathematics	.4687*	.2197	.4719*	.2227
Average	.5998*	.3598	.5185*	.2688

N = 212 * 1-tailed Significance: .001

Table 4

H2c Correlations

BSI-CAT and CASAS Form 130 as a Predictor of GED

Stepwise Regressions

GED Subtest	Final Stepwise Regression Results BSI-CAT and CASAS Form 130 Compared to Greatest Simple Correlation					
	Multiple R	BC/M (r)	BC/R (r)	R Square	BC/M (r^2)	BC/R (r^2)
Writing	.77331	.7131*		.59800	.5085	
Social Studies	.71808	.6292*		.51564	.3959	
Science	.74924	.6792*		.56136	.4613	
Literature and the Arts	.66509		.6006*	.44235		.3607
Mathematics	.72164	.7216*		.52076	.5207	
Average	.82232	.7510*		.67621	.5640	

N= 212 * 1-tailed Significance: .001

The final pair of hypotheses stated that the predictive validity of the Basic Skills Inventory-Computer Adaptive Test (BSI-CAT) and the CASAS Form 130 in relation to the General Educational Development (GED) would not significantly vary between ethnic groups of incarcerated youth. Table 5 provides the stepwise multiple regression matrix for each subtest by ethnicity.

Table 5

H3a and H3b Correlations

BSI-CAT and CASAS Form FA as a Predictor of GED by Ethnicity

Stepwise Regressions

	Final Stepwise Regression Results BSI-CAT and CASAS Form 130 by Ethnicity							
	African-American		Hispanic		White		Total	
GED Subtest	Mult. R	R^2	Mult. R	R^2	Mult. R	R^2	Mult. R	R^2
Writing	.70540	.49759	.76879	.59104	.86054	.74054	.77331	.59800
Social Studies	.66067	.43649	.77296	.59747	.60138	.36166	.71808	.51564
Science	.71926	.51733	.73430	.53920	.77375	.59869	.74924	.56136
Literature & Arts	.58004	.33645	.65272	.42605	.75733	.57355	.66509	.44235
Mathematics	.66352	.44026	.67835	.46016	.83963	.68828	.72164	.52076
Average	.77379	.59875	.81950	.67159	.82954	.68814	.82232	.67621

Reliability of the study results was determined by randomly splitting the total population and each ethnic subgroup in half, and performing separate analyses on each half. Four such random splits were completed and stepwise multiple regressions of all predictor subtests on the GED Average were run. These results were compared, and were found to be consistent across splits in both the total population and in each ethnic group. Table 6 lists the final R^2 for each split and compares it to

those for the intact population. The greatest range of variation was produced in the White subpopulation which was the smallest sample. The numbers in the split in the White grouping ranged from 20 to 26 which is more susceptible to extremes. African American, Hispanic, and total population were more stable across splits.

Table 6

Split Halves Reliability

Stepwise Regression Final R^2

	Stepwise Regression Final R^2				
GED Average	Split 1	Split 2	Split 3	Split 4	Total
African American	.58229	.57142	.59276	.60257	.59875
Hispanic	.64092	.70392	.65805	.66321	.67159
White	.72917	.72736	.79264	.76010	.68814
Total Population	.75545	.67531	.71414	.71717	.67621

Expectancy tables for each GED subtest and for the GED Average were developed. Of the five predictor subtests, BSI-CAT Mathematics and BSI-CAT Reading were the most significant predictors of performance on the GED. Analysis of the items showed that these two subtests included more higher order thinking skills and fewer knowledge-based items. Table 7 shows that cross tabulations used to develop the expectancy table

for the GED Average. The final expectancy table is shown in Table 8. Separate expectancy tables based on the CASAS instrument have also been developed. An example is shown in Table 9.

Table 7

Expectancy Table with Study Totals

BSI-CAT Mathematics as a Predictor of GED Average

BSI-CAT Mathematics Score	GED Average Score				
	<35	35-39	40-44	≥45	Row Total
<475	27*	12	1	0	40
	67.5%**	30.0%	2.5%	0.0%	18.9%
476-523	9	31	21	6	67
	13.4%	46.3%	31.3%	9.0%	31.6%
524-574	5	17	24	10	56
	8.9%	30.4%	42.9%	17.9%	26.4%
≥575	0	7	11	31	49
	0.0%	14.3%	22.4%	63.3%	23.1%
Column Total	41	67	57	47	212
	19.3%	31.6%	26.9%	22.2%	100.0%

*Count **Row Percent

Table 8

Expectancy Table

BSI-CAT Mathematics as a Predictor of GED Average

BSI-CAT Mathematics Score	Predicted GED Score			
	<35	35-39	40-44	≥45
<475	.675	.300	.025	.000
476-523	.134	.463	.313	.090
524-574	.089	.304	.429	.179
≥575	.000	.143	.224	.633

Table 9

Expectancy Table

CASAS Form 130 Reading as a Predictor of GED Average

CASAS Form 130 Reading Score	Predicted GED Average Score		
	<35	35-39	≥40
≤222	63.6	31.8	4.5
223-231	10.2	44.9	44.9
≥232	6.7	26.1	67.2

Conclusions

There were five major conclusions determined by this study. First, the subjects, although not selected for high achievement or participation in a GED preparation program, demonstrated a readiness to take and pass the GED. This was evidenced by the high number and percentage of the subjects which, had this been the Official GED Test, would have passed at that time. Of the 212 subjects who completed all subtests in the study, 53 scored a minimum of 40 on each subtest as well as achieving an average of 45, the current standards for passing the GED in the State of California. This was 25 percent of the study sample. An additional 5 subjects (2 percent) averaged 45 or greater but failed to achieve a minimum of 40 on one subtest. There were 17 more (8 percent) who scored at least 40 on each subtest, but achieved an average which was less than 45. These three groups together account for over 35 percent of the sample. There were an additional 31 subjects who passed four out of five of the GED subtests. Cumulatively, half of the study subjects passed at least four out of five of the GED subtests. Table 10 displays the numbers and percentages of the sample who achieved at each performance level on the GED.

Table 10

GED Performance of Sample

Performance Standard	N	Percentage	Cumulative Percentage
Achieved GED California standard	53	25.00	25.00
Averaged >45, but scored <40 on 1 subtest	5	2.36	27.36
Scored minimum of 40 on all subtests, but averaged <45	17	8.02	35.38
Scored minimum of 40 on 4 out of 5 subtests	31	14.62	50.00
Scored minimum of 40 on 3 out of 5 subtests	28	13.21	63.21
Scored minimum of 40 on 2 out of 5 subtests	22	10.38	73.59
Scored minimum of 40 on 1 out of 5 subtests	18	8.49	82.08
Scored minimum of 40 on no subtests	38	17.92	100.00
Total	212	100.00	

Second, of the five subtests of the two predictor instruments, two were the most significant predictors. BSI-CAT Mathematics and BSI-CAT Reading were consistently the first two to be selected in the stepwise multiple regressions. On the GED Mathematics subtest, they were the only two predictor subtests to enter the equation. On the remaining GED

subtests as well as the GED Average, CASAS Reading entered the equation next. BSI-CAT Language Arts entered next in two GED subtests, and CASAS Mathematics never entered the equation.

Third, an efficient, quick method of predicting GED performance was established. Both BSI-CAT and CASAS Form 130 take approximately one hour to administer and score. BSI-CAT provides an immediate printout of the results while CASAS takes no more than a few minutes to count correct responses and convert raw scores to scale scores with its self-scoring format. The teacher or counselor can quickly determine how ready a student is for the GED by comparing either score to the appropriate expectancy table. Remediation or other GED preparation can be initiated.

Fourth, there were significant differences between the two predictor instruments. Although both BSI-CAT and CASAS Form 130 provide measures of basic skills in about the same amount of time, both their format and the types of questions were very different as were the predictability results. BSI-CAT was a stronger predictor of performance than CASAS Form 130. BSI-CAT, through its adaptive format, quickly determined the subject's ability range and assessed within a narrower, more tailored range by pulling from over 8,000 questions in its item bank. The CASAS instrument contained the same 50 items from a wider range for all subjects .

Finally, the results of the study did not vary by ethnicity. This allowed the development of one set of expectancy tables that can be utilized by all future subjects.

This study laid the groundwork for establishing a preparation protocol for older incarcerated students who are devoid of the requisite credits for a traditional high school diploma and who will seek a GED

diploma. This protocol has been piloted in the Division of Juvenile Court and Community Schools of the Los Angeles County Office of Education. The ramifications of improved GED preparation can effect thousands of incarcerated youth in the years to come.

References

Allen, C. A., & Jones, E. V. (Eds.). (1992). GED testing program: The first fifty years. Washington, D. C.: American Council on Education. (ERIC Document Reproduction Service No. ED 351 558)

Auchter, J. C., Sireci, S. G., & Skaggs, G. (1993). The Tests of General Educational Development technical manual, first edition. Washington, D. C.: American Council on Education.

Baird, S. C., & Steinhart, D. (1991). A design for the assessment of youth referred to the Los Angeles County juvenile justice system. San Francisco, CA: National Council on Crime and Delinquency.

Educational Testing Service. (1980, March). Item response theory: Concepts and applications. Symposium conducted at the Educational Testing Service, Princeton, NJ.

GED Testing Service. (1993). Examiner's manual for the Tests of General Educational Development. Washington, D. C.: American Council on Education.

Green, B. R., Bock, R. D., Linn, R. L., Lord, F. M., & Reckase, M. D. (1985). A plan for scaling the computerized adaptive Armed Services Vocational Aptitude Battery (ASVAB). San Diego, CA: Navy Personnel Research and Development Center, Manpower and Personnel Laboratory. (ERIC Document Reproduction Service No. ED 255 570)

Hambleton, R. K. (1986). The changing conception of measurement: A commentary. Applied Psychological Measurement, 10 (4), 415-421.

Hambleton, R. K. (1993). Principles and selected applications of item response theory. In R. L. Linn (Ed.), Educational measurement (3rd ed.), (pp. 147-200). Phoenix, AZ: The Oryx Press.

Hambleton, R. K., & Martois, J. S. (1982). Evaluation of a test score prediction system based upon item response model principles and procedures (Report No. 123). Amherst, MA: School of Education, University of Massachusetts.

Hambleton, R. K., Murray, L., & Simon, R. (1982). Applications of item response models to NAEP mathematics exercise results (ECS Contract No. 02-81-20319). Amherst, MA: University of Massachusetts, Laboratory of Psychometric and Evaluative Research.

Hambleton, R. K., & Swaminathan, H. (1985). Item response theory: Principles and applications. Boston, MA: Kluwer-Nijhoff Publishing.

Harvey, F. (1992). The external diploma program (EDP) and the SCANS report: The external diploma program (EDP) and CASAS. Paper presented at the Annual Meeting of the American Association for Adult and Continuing Education, Anaheim, CA, November 4-7. (ERIC Document Reproduction Service ED 356 346)

Legislative Analyst's Office (1993). The impact of closure of juvenile probation camps. Sacramento, CA: Author.

Little Hoover Commission. (1994, September). The juvenile crime challenge: Making prevention a priority. Sacramento, CA: Author.

Lord, F. M. (1980). Applications of item response theory to practical testing problems. Hillsdale, NJ: Lawrence Erlbaum Associates.

Los Angeles County Office of Education. (1993). California Basic Educational Data System (CBEDS), 1980-1989 Report. Downey, CA: Author.

McBride, J. R. (1977). Applications of computerized adaptive testing: A brief overview of adaptive testing. In D. J. Weiss (Ed.), Proceedings of the Annual Convention of the Military Testing Association, October 18, 1976, (pp. 37-43). (ERIC Document Reproduction Service No. ED 137 360)

Stewart, D. W. (1992). GED: 50 years at a glance. In C. A. Allen & E. V. Jones (Eds.), GED testing program: The first fifty years (pp. 18-19). Washington, D. C.: American Council on Education. (ERIC Document Reproduction Service No. ED 351 558)